

## REMARKS/ARGUMENTS

Reconsideration and withdrawal of the rejections of the application are respectfully requested in view of the amendments and remarks herewith, which place the application into condition for allowance. The present amendment is being made to facilitate prosecution of the application.

### I. STATUS OF THE CLAIMS AND FORMAL MATTERS.

Claims 10-19 are currently pending in this application. Claim 10 is independent and is hereby amended. No new matter has been introduced. Support for this amendment is provided throughout the Specification as originally filed.

Changes to the claims are not made for the purpose of patentability within the meaning of 35 U.S.C. §101, §102, §103, or §112. Rather, these changes are made simply for clarification and to round out the scope of protection to which Applicants are entitled.

### II. REJECTIONS UNDER 35 U.S.C. §103(a)

Claims 10-19 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Pub. No. 2002/0052228 to Ko (hereinafter, merely “Ko”) in view of U.S. Patent No. 6,373,397 to Song (hereinafter, merely “Song”) in view of U.S. Patent No. 6,549,789 to Kfoury (“Kfoury”) in view of U.S. Patent No. 6,628,974 to Lim (“Lim”).

Claim 10 recites, *inter alia*:

“An electronic device, comprising:...

a rotary operating unit that is freely rotating to make a complete rotation  
about an axis of the rotary operating unit configured to accept rotating  
operation of a user,

...

said active element generates pulse signals having a phase difference depending on a direction of rotation of said rotary operating unit."  
(Emphases added)

Applicant respectfully submits that the relied upon portions of Ko does not teach or suggest the above identified features of claim 10.

First, the relied upon portions of Ko does not disclose or suggest "a rotary operating unit that is freely rotating to make a complete rotation about an axis of the rotary operating unit," as recited in claim 10. Specifically, the Office Action points to *Ko*, Publ. App. par. [0025] and states, "reads on the closing motor rotates clockwise or counter clockwise according to the operation control of motor driving unit." Claim 10 of the present application recites, "to make a complete rotation about an axis." The Ko device, as applied in the Office Action, rotates the sub-body (120) between an open and a close position. As clearly shown in *Ko*, FIG. 1A, 1B, the sub-body is not arranged to make a complete rotation about an axis of the rotary operating unit.

Moreover, Kfoury describes a swivel hinge 214 that rotates about two axes of the hinge, first axis 302 and second axis 304. However, the swivel hinge 214 cannot make a complete rotation about axis 302 or 304 as claimed in the instant invention and its rotation is confined to a predetermined maximum angle. Therefore, the rotary operating unit of the present invention is distinguished over the swivel hinge 214 of Kfoury as well as over Ko.

In contrast, in the present application the rotary operating unit in the present invention is freely rotatable to make a complete rotation about the axis of the rotary device. The electronic device according to the present invention includes the rotary operation unit that is freely rotatable, active elements 31 and 32 for detecting rotation of the rotary operation unit, and control means 43 for controlling the power supply to the active elements 31 and 32 depending on a state of the device and determine the number of rotations of the rotary device. Publ. App. pars. [0030], [0041].

Song and Lim do not add the elements missing from Ko and Kfoury.

Therefore, Applicant submits that independent claim 10 is patentable over the applied art of Ko, Song, Kfoury and Lim because those references taken either alone or in combination do not teach or suggest the above-identified features of claim 10. Specifically, the combination of applied art does not teach or suggest an electronic device comprising “a rotary operating unit that is freely rotating to make a complete rotation about an axis of the rotary operating unit,” as recited in independent claim 10.

Second, claim 10 recites, “generates pulse signals having a phase difference depending on a direction of rotation of said rotary operating unit.” That is, in an aspect of the present invention, the rotary operating unit generates pulse signals having a phase difference and the phase difference is based upon the direction of rotation of the rotary operating unit. For example, rotary element (23a) has active elements (31) and (32) arranged with a shift in the circumferential direction. In such a structure, when the rotary disc (23a) is rotated, magnets arranged on the back of the rotary disc rotate. Then, depending on the direction of rotation, each active element generates a pulse signal having a phase difference. Thus, it is possible to obtain information on the number of rotation and the direction of rotation. Publ. App. par. [0041] and FIGS. 5, 6.

The Office Action points to Lim, col. 6, lines 40-65 for the above feature recited in claim 10. However, in the Lim device, the active elements detect the position of the rotating section or opens (closes) a folder by compensating for the phase difference. There is no suggestion in Lim that the *direction of rotation* of the rotating section is determined based upon the phase

difference of the pulses from the active devices. Indeed, Lim specifically uses the phase information from the position detectors 51, 52 to determine a *position* of the rotating section.

Kfoury, Song and Ko do not add the element missing from Lim as discussed above.

For this additional reason, claim 10 is believed patentable over the applied references.

### **III. DEPENDENT CLAIMS**

The other claims are dependent from independent claim 10 discussed above, and are therefore believed patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

### **CONCLUSION**

In view of the foregoing remarks, it is believed that all of the claims in this application are patentable and Applicant respectfully requests early passage to issue of the present application.

In the event the Examiner disagrees with any of statements appearing above with respect to the disclosure in the cited reference, or references, it is respectfully requested that the Examiner specifically indicate those portions of the reference, or references, providing the basis for a contrary view.

Please charge any additional fees that may be needed, and credit any overpayment, to our  
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Respectfully submitted,

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